

Non-EGU Discussion with State/locals:

* For PMTR, EPA needs to assess, for stationary nonEGU SO₂ and NO_x:

- how important are nonEGU emissions to regional inventories?
- what are the available control options?
- what are the costs of those options?
- which emission units in the inventory does a given control apply to?
- baseline projections of future emissions
- budgets for nonEGUs reflecting the baseline projections and controls

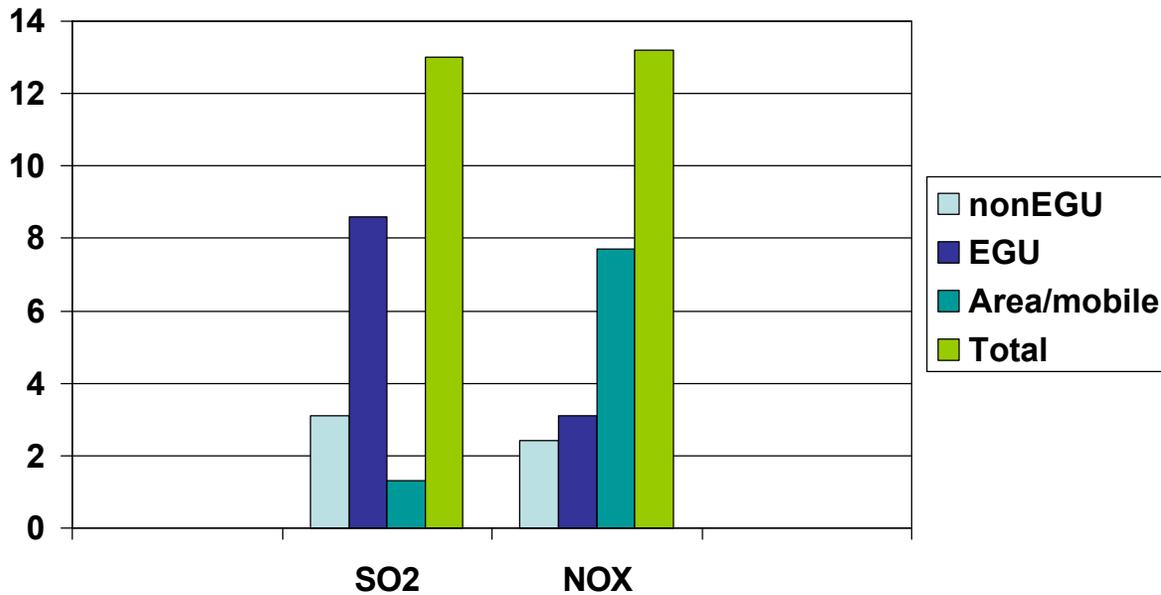
* Many places where State/local agencies in East can provide useful data and checks on the data

* In this presentation, will:

- provide overview of the nonEGU inventory for a region of the East that includes 29 states + DC
- provide status report of EPA's efforts
- category-specific discussion of a categories that appear to have most greatest contribution to the nonEGU total

Overview of NonEGU Inventory (2010 Projections from 1996 for region which includes 29 states + DC)

SO₂ and NO_x emissions vs EGU and total (2010 emissions projected from 1996, in millions of tons)



Largest Stationary nonEGU SO₂ Categories

Category	2010 SO ₂ Emissions (tons/yr)
Industrial boilers	1.55 million (60% coal... remainder oil/process gas)
Petroleum refineries	[In all 463,000 from SIC 2911] 156,000 catalytic cracking [+ additional amount coded as "CO boiler" for a few] 108,000 process heaters [+ additional amount coded as "boiler" above] sulfur recovery – most coded as "elemental sulfur production"
Cement kilns	188,000
Sulfuric Acid production	125,000
Primary lead production	99,000
Pulp mill recovery furnaces	97,000
Oil and gas production	92,000
Coke ovens	91,000
Elemental sulfur production	70,000
Carbon black production	50,000

Largest Stationary nonEGU NO_x Categories

Category	2010 Emissions (tons/yr)
Industrial boilers	803,000
IC engines	640,000
Refinery process heaters	151,000
Glass furnaces	70,000
Oil and gas production	54,000
Nitric Acid Production	47,000
Pulp mill recovery furnaces	46,000
Waste incinerators	40,000

How much from biggest emitters?

* Another question for nonEGUs: what fraction of inventory comes from relatively large "trading program" type emissions units?

* We used NO_x SIP call cutoff of 1 tpd as place to start and looked at fraction of stationary source nonEGU inventory that represented sources individually >365 tons/yr.

* Out of the entire inventory, about 58,000 emissions units for the region:

--SO₂: 1510 units >365 tons/yr (83% of non EGU point source emissions)

– NO_x: 1216 units > 365 tons/yr (45% of nonEGU point source emissions)

For SO₂ → It would appear useful for States to check inventory for these units. A relatively small fraction of units has a big chunk of the total emissions. [We are providing list of these units by State for your review]

Category-specific SO₂ discussions:

1. Industrial boilers.
2. Petroleum refining.
3. Sulfuric acid plants.
4. Coke ovens.
5. Cement kilns.
6. Primary lead.
7. Oil and gas production.
8. Pulp mill recovery furnaces.
9. Carbon black plants.

For each category, will discuss:

* Status of EPA efforts on characterizing inventory and possible controls [note: no ACT documents for SO₂],

* Observations regarding events between 1996 and present that may impact 2010 projections

* Needed information/corrections (including information you maybe could provide!)

* Your ideas/thoughts on the category

Industrial boilers:

* Current status:

Inventory: About 530 coal-fired boilers >365 tons/yr emit about 880,000 tons

Oil: About 130 oil-fired boilers >365 tons/yr emit about 180,000 tons

Remainder coded as "boiler" [SCCs 102XXXXXX or 103XXXXXX] about 200,000 tons – mostly industrial process gas, some petroleum coke etc

Controls: Fuel switching
Scrubbers

Observations:

- Current inventory data make it difficult to assess costs of either fuel switching or scrubbers
- Generally missing information on hours of use, current lb/MMBTU or % sulfur, boiler size, existing controls

* Help needed from State/locals:

- Corrections: shutdowns, replacements, possible errors [e.g., TN Eastman 154 tons of Nox, seems inconsistent with 24,000 tons SO₂??]
- Additional unit specific information
 1. Unit size
 2. Hours of operation
 3. Installed emission controls (Nox, Sox and PM)
 4. Emission rates for NOx, SOx and PM

Petroleum refining:

* Current status:

*Inventory – in SIC 2911, 200 units >365 tons/yr. Three biggest sources:

- Catalytic cracking
- Sulfur recovery plants
- Process heaters

* Controls

- Catalytic cracking: FGD or additives
- Sulfur recovery plants: mostly well controlled? Using NSPS as point of reference, some may not meet [e.g. 2 stage Claus units].
- Process heaters: can reduce emissions substantial if use oil

* Observations

- 31% of refining capacity subject to enforcement settlements. Current inventory does not reflect. Additional settlements possible if not likely, but probably no way to reflect until they are finalized?
- there may be a few shutdowns not reflected but I don't think this is substantial effect on emissions

* Help need from States/locals:

- some large-emitting emissions units coded as "fugitive" or "miscellaneous" – would useful to clarify these.
- inventory codes do not characterize sulfur recovery plants? [e.g., 2 stage vs 3 stage, whether tail gas treatment present]

* Your thoughts?

Sulfuric Acid plants

- * Current status:

- *Inventory: 126,000 tons from about 100 emissions units

- 43,000 tons coded as 99.9% conversion
 - 5,000 tons 99.5% conversion
 - 4,000 tons 99 % conversion
 - 65,000 tons 98 % conversion
 - 8,000 tons <98% conversion

- * Controls: NSPS 4 lb/ton dual need dual absorption to meet

- * Observations

- Using AP-42 factors associated with rates of conversion, it looks like would reduce inventory by about 1/2 if all plants met the NSPS

- * Help need from States/locals:

- Information on cost differences for going to dual absorption—anyone costed this out? Any ideas?

- * Your thoughts?

Coke Ovens

* Current status:

*Inventory: 2010 inventory projected from 1996: about 105 emissions units emitted about 91,000 tons

* Controls: Coke oven gas desulfurization [good data, collected in MACT surveys, exists on H₂S content at each currently operating battery]

* Observations:

- 7 plants which were operating in 1996 are not longer in operation. These plants emitted about 49,000 tons in the projected inventory.
- of the remainder, about 26,000 from plants which currently desulfurize, about 16,000 from plants which do not.

* Help need from States/locals:

- * Confirm our assessment regarding shutdowns.
- * Identify any missing units (should be pretty good)
- * Info on costs of desulfurization process

* Your thoughts?

Cement kilns

* Current status:

*Inventory. 2010 inventory: about 183,000 tons from about 170 units.

* Controls. Inherent in process.

Some research has been done by DOE on increasing SO₂ controls by using recycled kiln dust as media.

MACT process concluded switching to natural gas not feasible.

* Observations.

* Help need from States/locals:

Is FGD required anywhere for any new or existing kiln?

Any new source permit with comprehensive engineering analysis of this issue?

* Your thoughts?

Primary lead smelters

* Current status:

*Inventory: About 100,000 tons from two plants in MO.

* Controls: Acid plant

* Observations

Herculaneum has acid plant

Glover facility does not.

* Help need from States/locals:

Have already discussed this with State. Would be useful if any written documentation existing regarding cost of acid plant at Glover.

* Your thoughts?

Oil and gas production

* Current status:

*Inventory:

about 100,000 tons in inventory from SICs 1311 and 1321
89,000 from 47 emissions units >365 tons/yr

Assume most is from sulfur recovery plants at gas
"sweetening" facilities

* Controls:

Basically same controls as refinery sulfur recovery plants
described earlier

WRAP has developed scheme for describing level of controls
for various configurations

* Observations

Inventory codes do not provided information to determine
whether:

- any such facilities do not have a Claus plant
[unlikely?]
- Claus plant is 2-stage or 3-stage, or whether has tail
gas treatment

* Help need from States/locals:

Information on current configuration at the largest units

* Your thoughts?

Pulp mill recovery boilers

* Current status:

*Inventory: [note: this is recovery boilers only.... main boilers are included in general industrial boiler discussion above]

About 118,000 tons in inventory for SCC 307001XX. About 104,000 from >365 tons/yr units. Most from recovery boilers.

* Controls. Assume controls not feasible. Low concentration high volume.

* Observations

* Help need from States/locals:

Corrections on inventory – any missing plants? Any shutdowns?
Errors?

* Your thoughts?

Carbon black plants

* Current status: *[less attention to this category to date than the others]*

* Inventory 50,000 tons in SCC 301005XX

42,000 from 41 emissions units >365 tons/yr

* Controls ???????????

* Observations

* Help need from States/locals:

[contact on information on controls... e.g., has anyone looked at sulfur in feedstock? Any way to influence this?]

* Your thoughts?

Other categories

Thoughts welcome on:

- any other categories in inventory overlooked in this summary if:
 - significant regional SO₂ emissions
 - possible cost-effective reductions
 - significant changes in inventory between 1996 and present